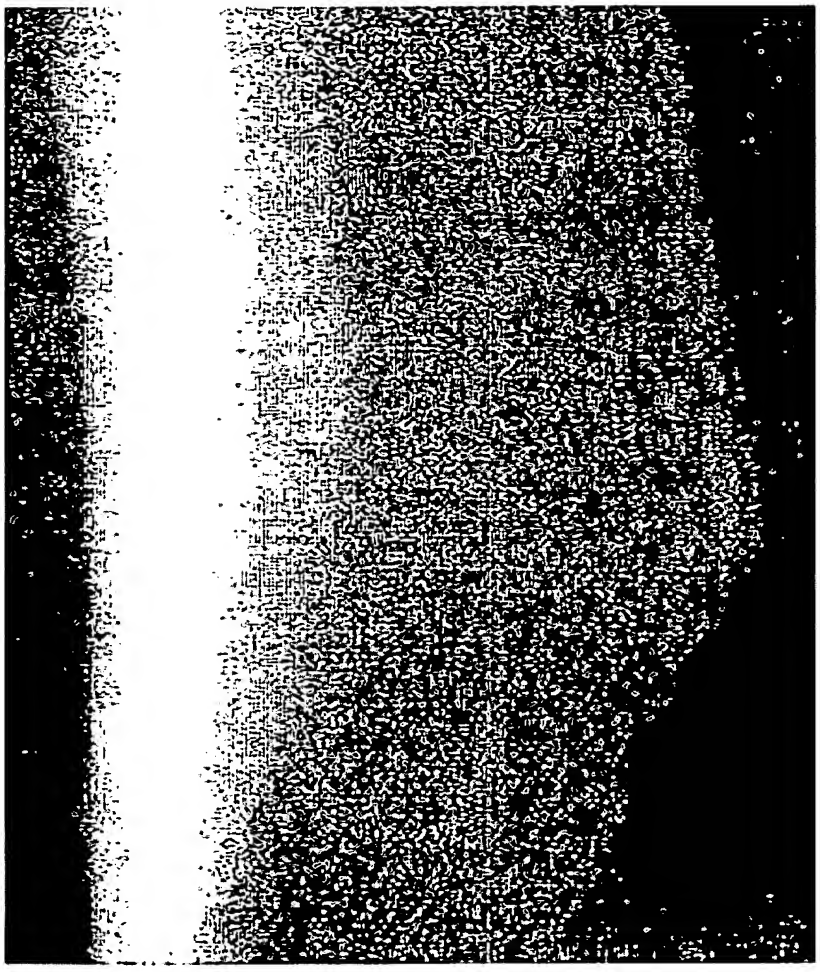


FIG. 1A

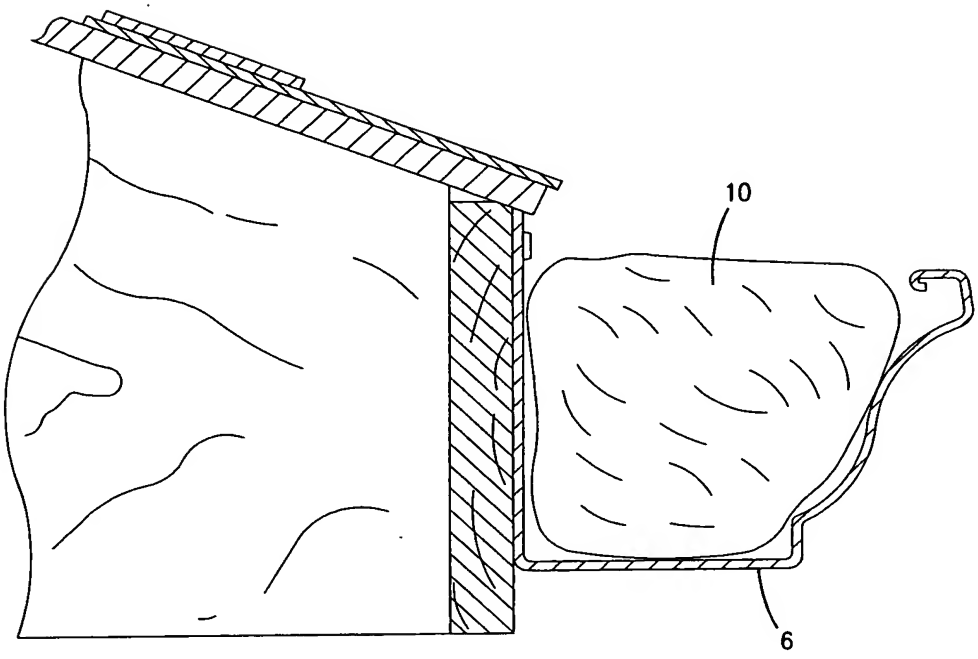


FIG. 1B

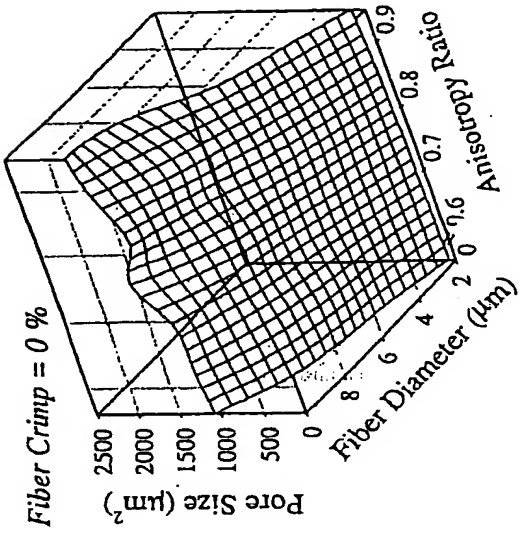


FIG. 2C

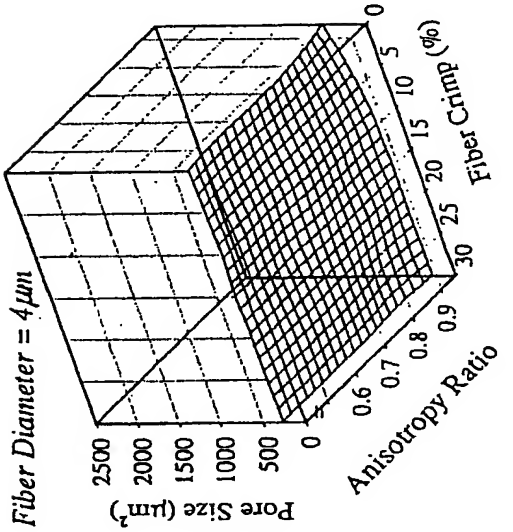


FIG. 2B

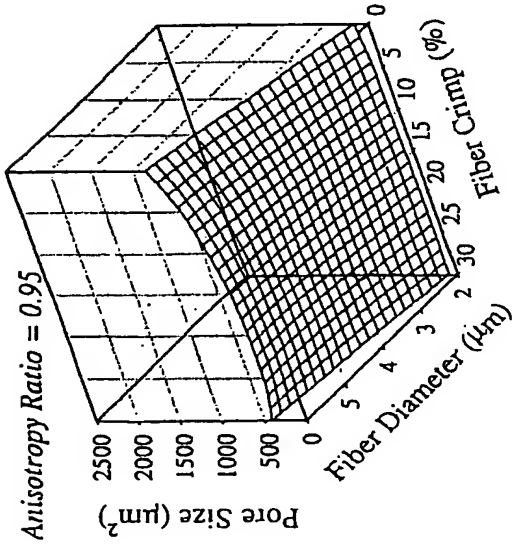


FIG. 2A

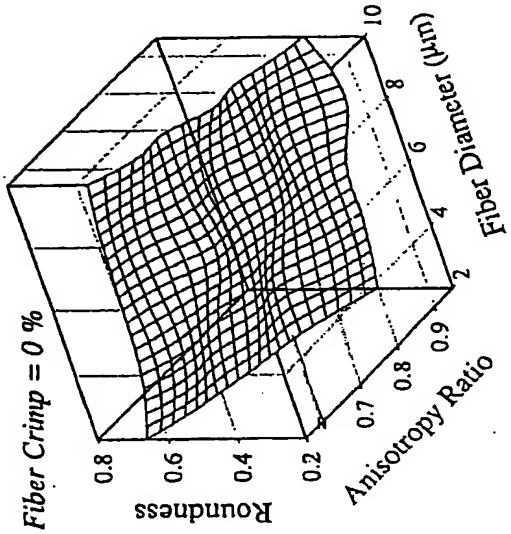


FIG. 3C

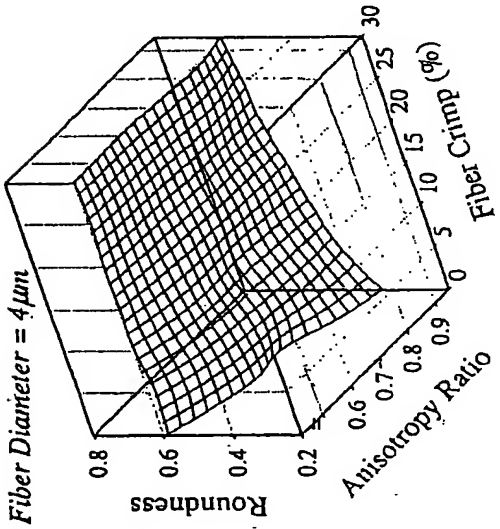


FIG. 3B

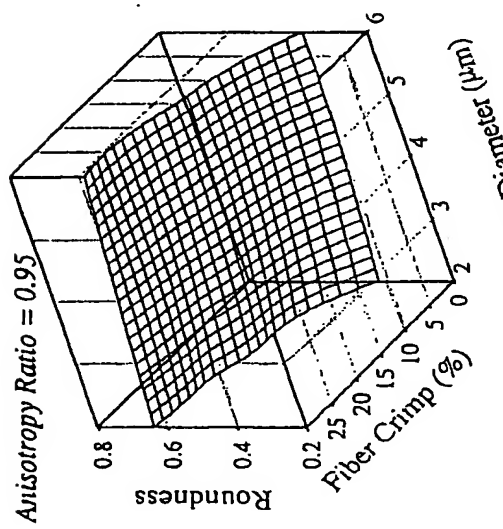


FIG. 3A

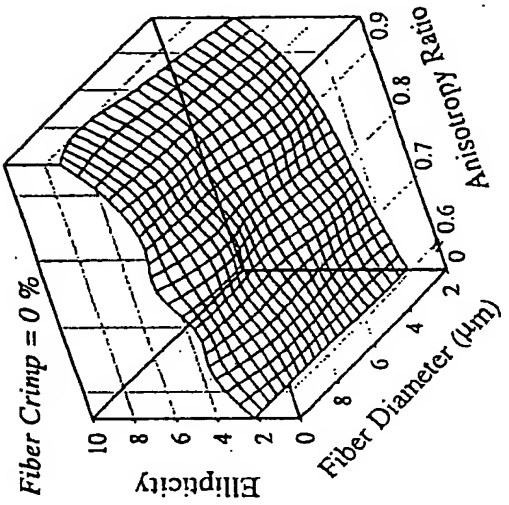


FIG. 4C

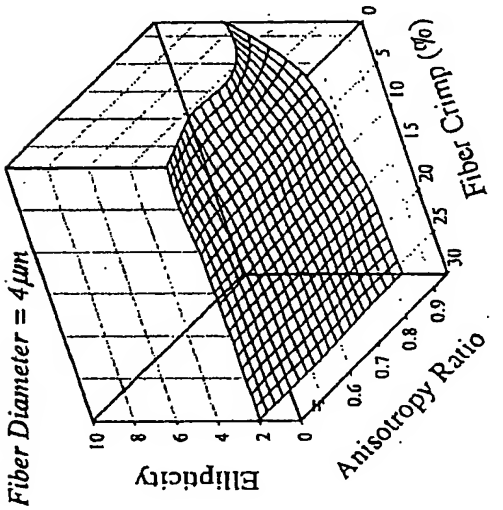


FIG. 4B

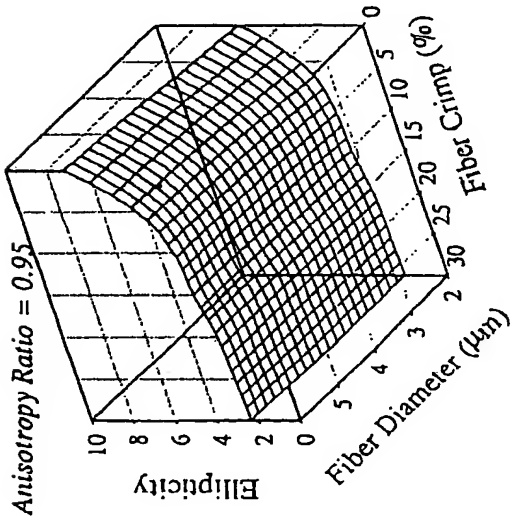
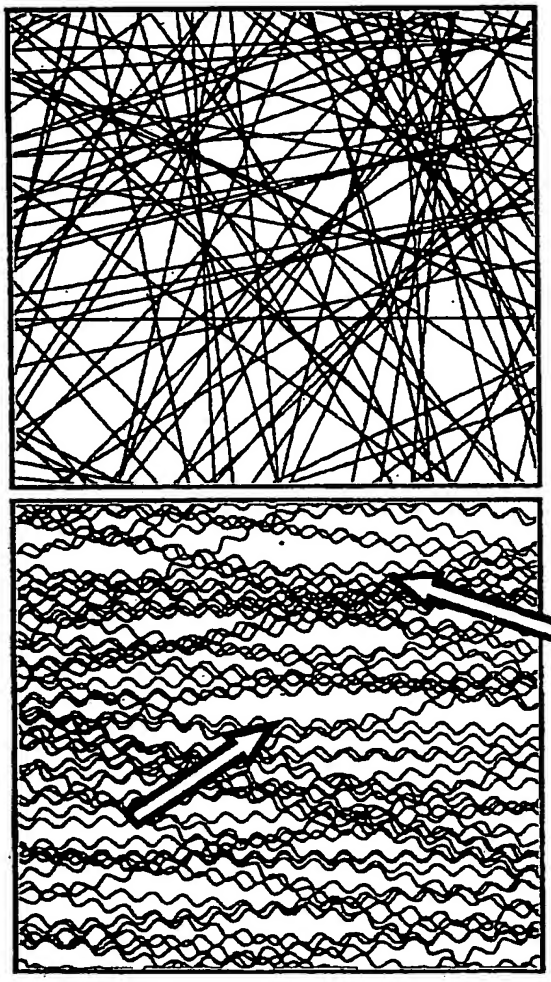


FIG. 4A



Normal ODF
Mean = 90
std dev = 10
Anisotropy Ratio = 0.95
Fiber Diameter = 6 µm
Crimp = 30 %

FIG. 5A

Random ODF
Min = 0
Max = 179
Anisotropy Ratio = 0.00
Fiber Diameter = 6 µm
Crimp = 0 %

FIG. 5B

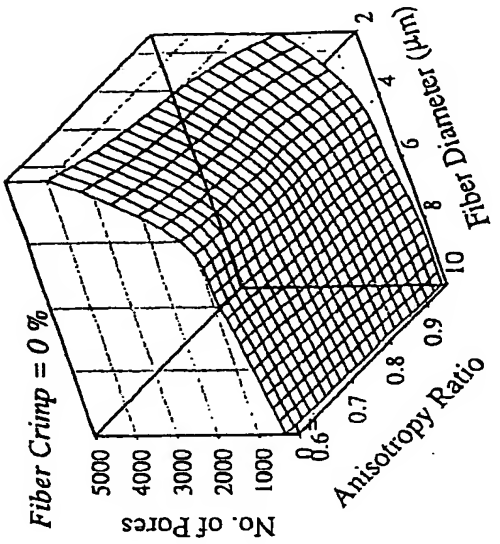


FIG. 6C

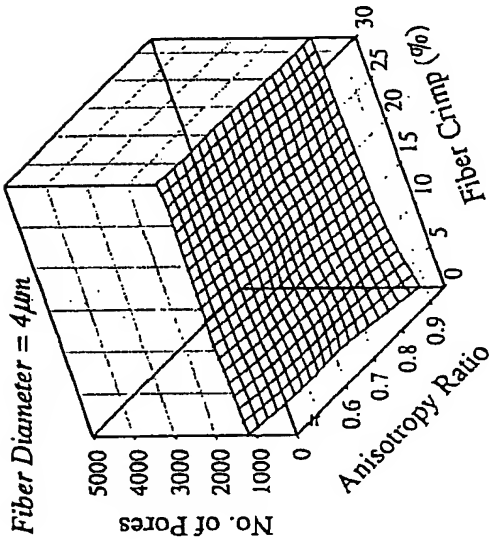


FIG. 6B

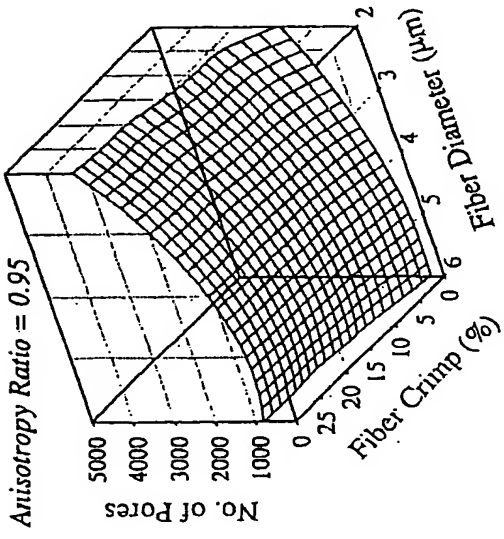
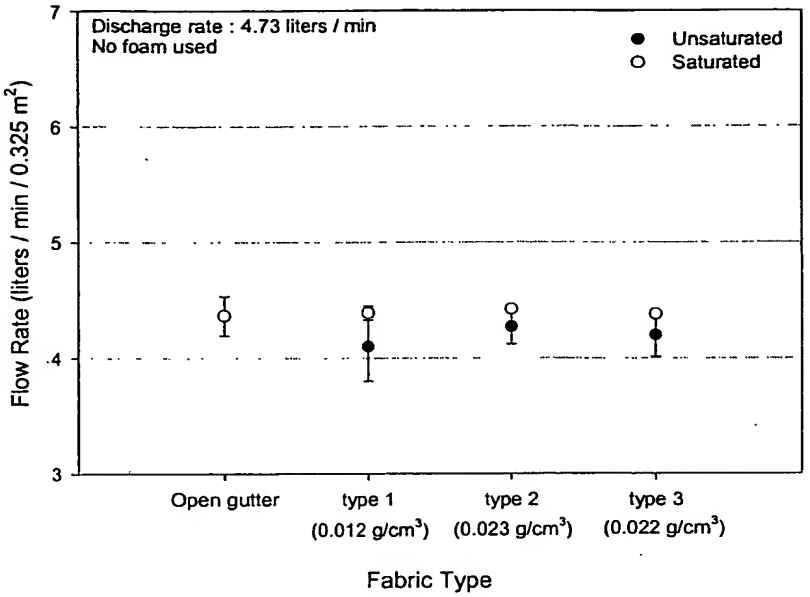


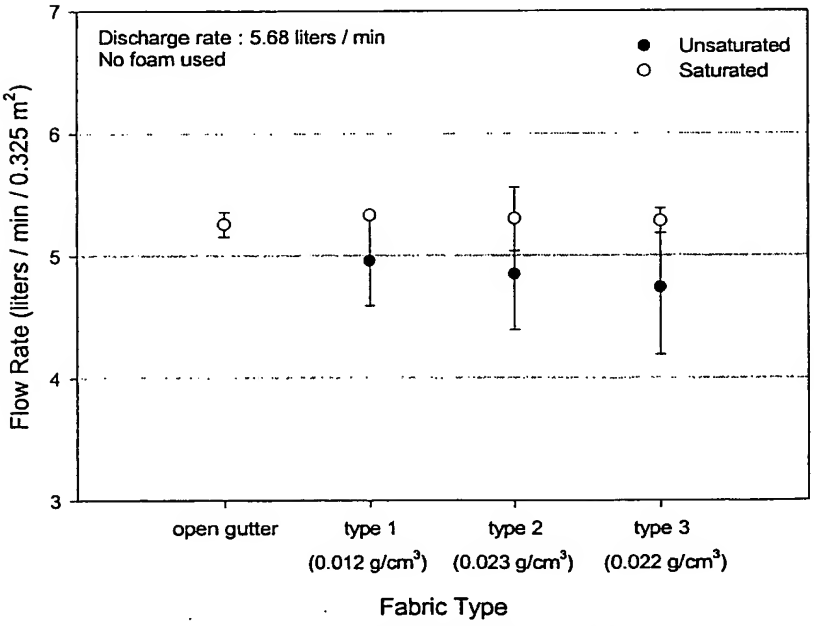
FIG. 6A

FIG. 7



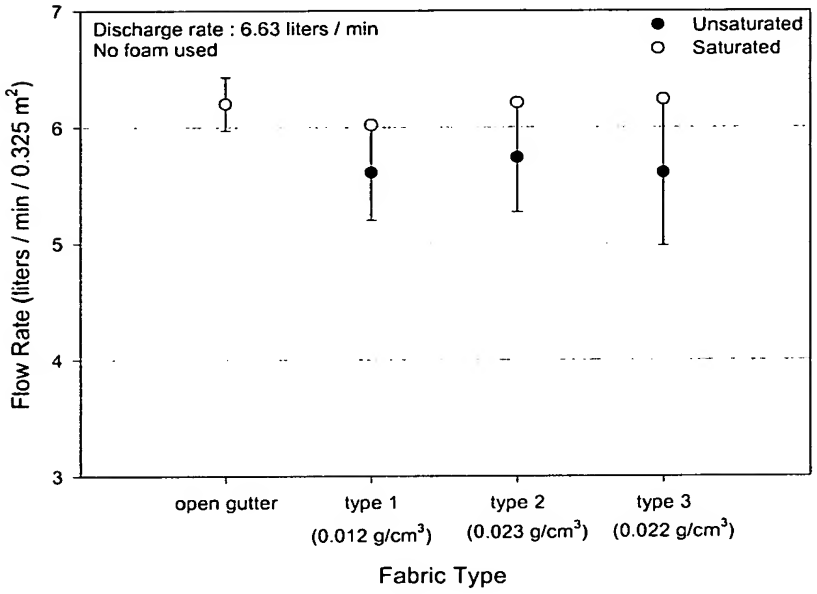
Fabric Type vs. Flow Rate at 4.73 liters/min discharge

FIG. 8



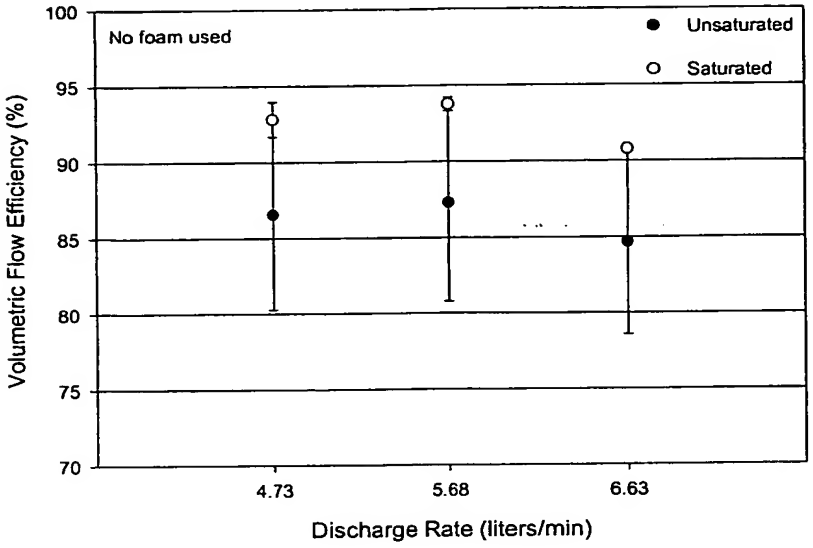
Fabric Type vs. Flow Rate at 5.68 liters/min discharge

FIG. 9



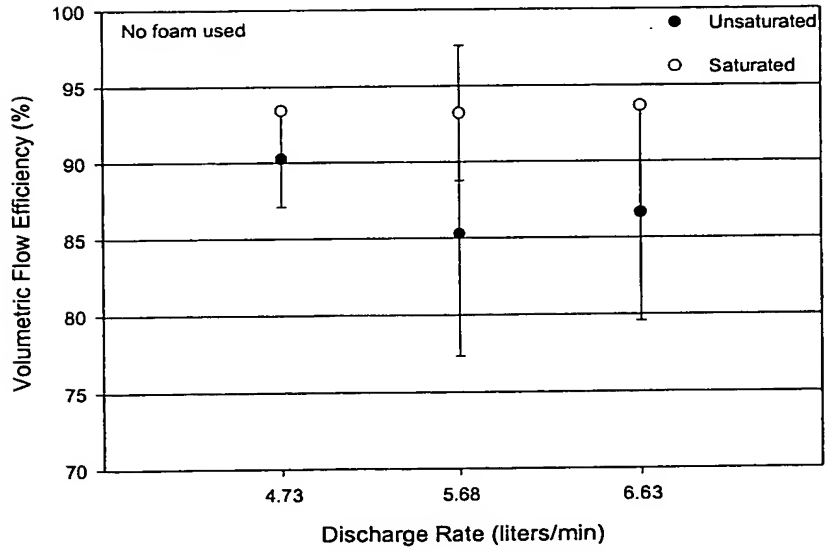
Fabric Type vs. Flow Rate at 6.63 liters/min discharge

FIG. 10



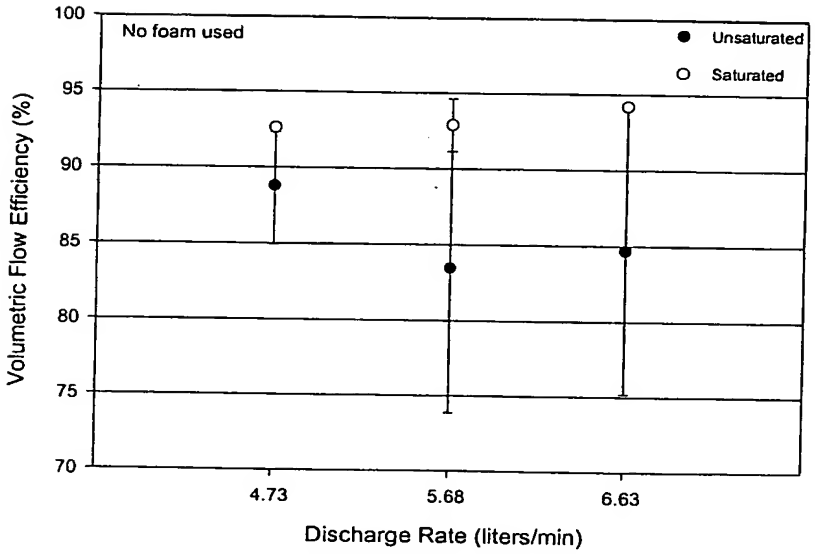
Vol. Flow Efficiency of Type 1 sample at different discharge rates

FIG. 11



Vol. Flow Efficiency of Type 2 sample at different discharge rates

FIG. 12



: Vol. Flow Efficiency of Type 3 sample at different discharge rates

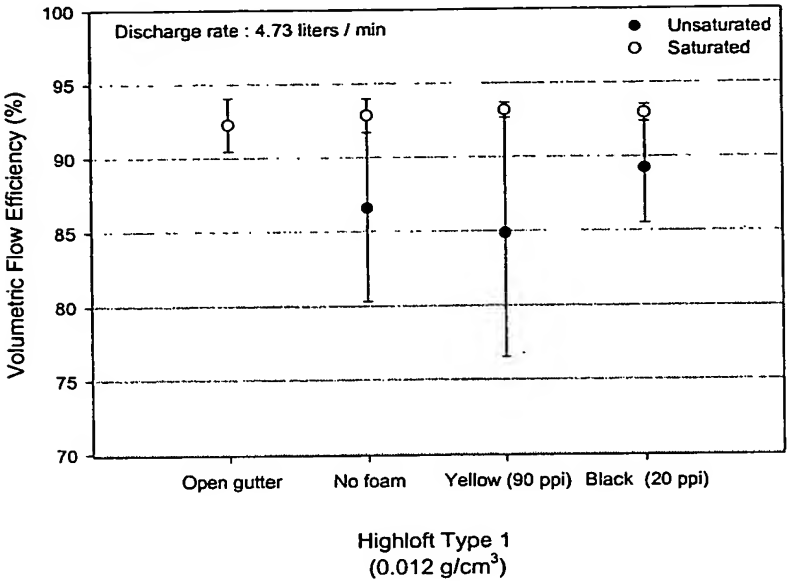
Yellow foam material (left) under a highloft

FIG. 13A

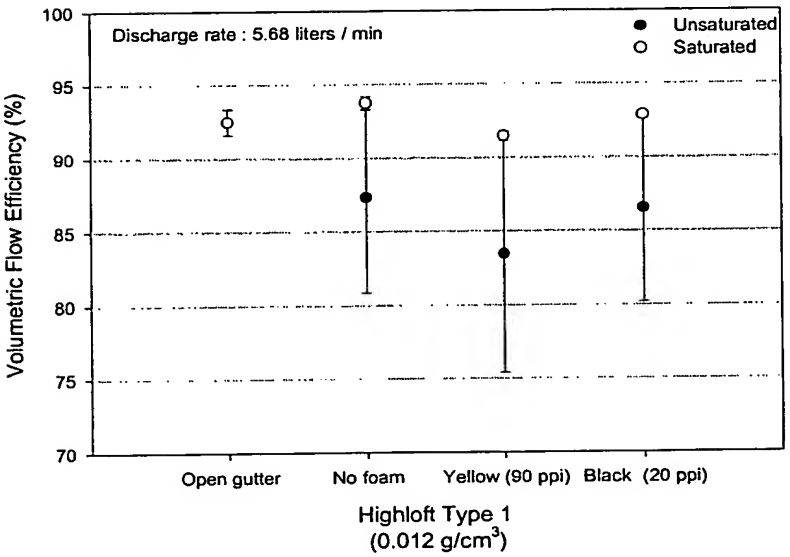
Black foam material (right) under a highloft

FIG. 13B

FIG. 14



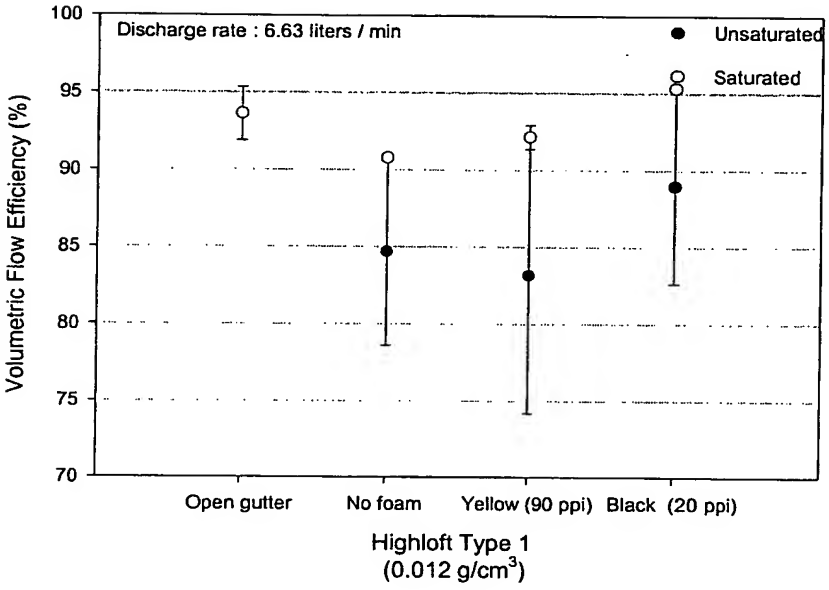
Type 1 (under the presence of different foams) VS. Vol. Flow Efficiency at 4.73 liters/min



Highloft Type 1 (under the presence of different foams) vs. Vol. Flow Efficiency at 5.68 liters/min

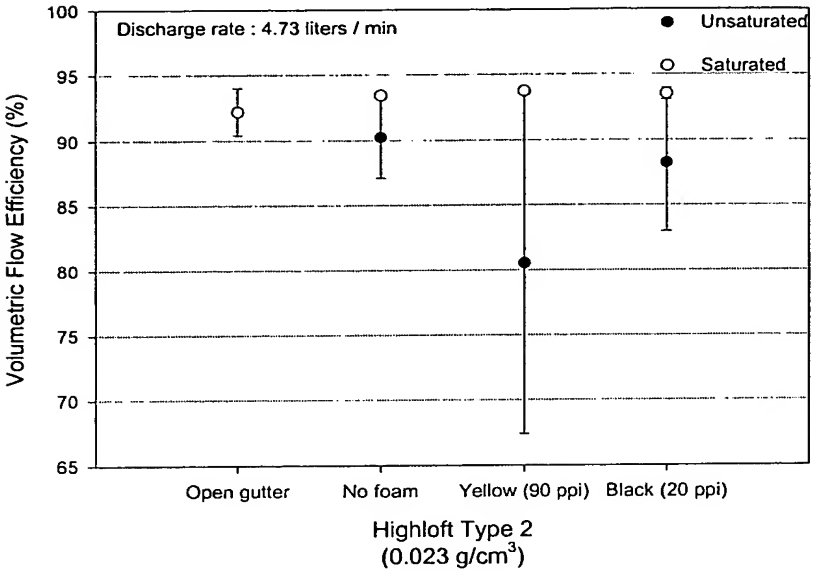
FIG. 15

FIG. 16



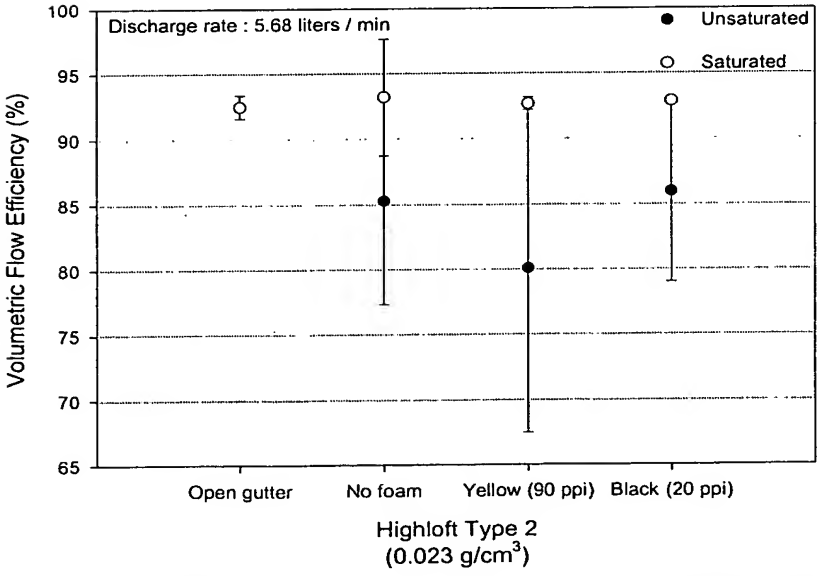
Highloft Type 1 (under the presence of different foams) vs. Vol. Flow Efficiency at 6.63 liters/min

FIG. 17



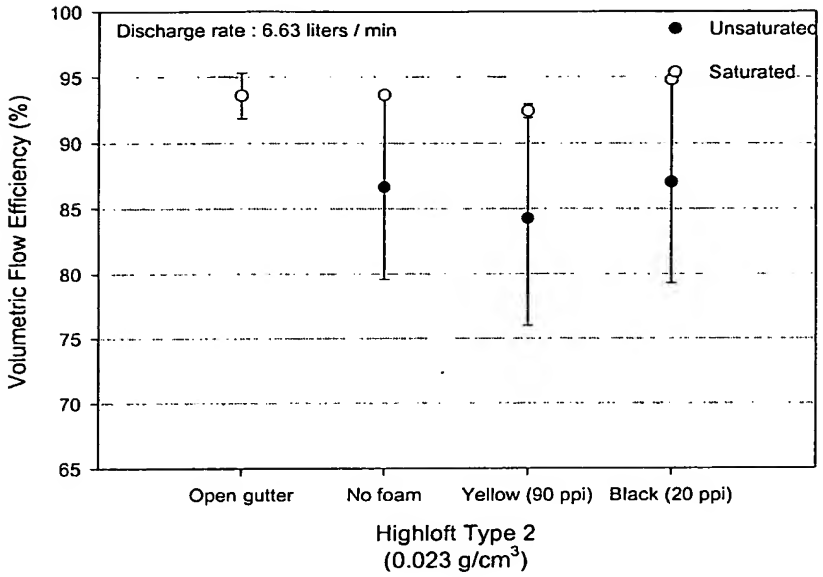
Highloft Type 2 (under the presence of different foams) vs. Vol. Flow Efficiency at 4.73 liters/min

FIG. 18



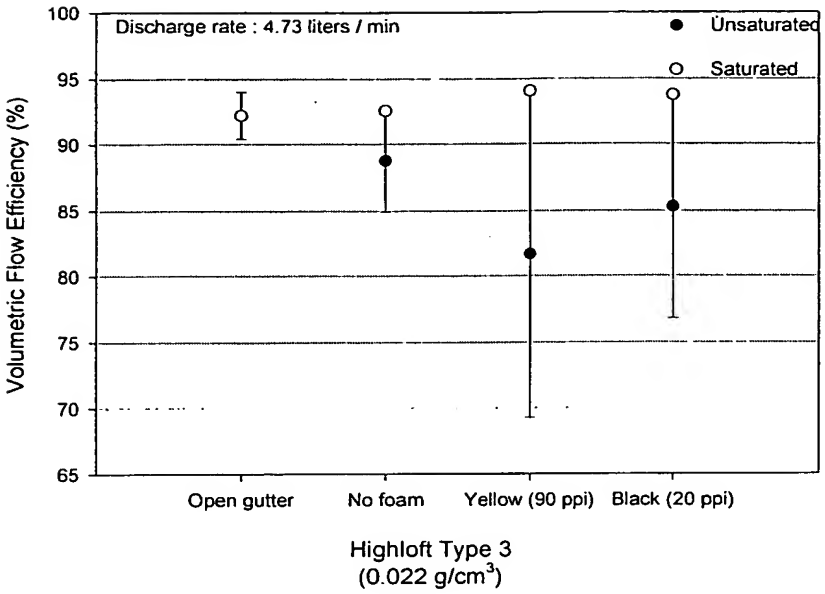
Highloft Type 2 (under the presence of different foams) vs. Vol. Flow Efficiency at 5.68 liters/min

FIG. 19



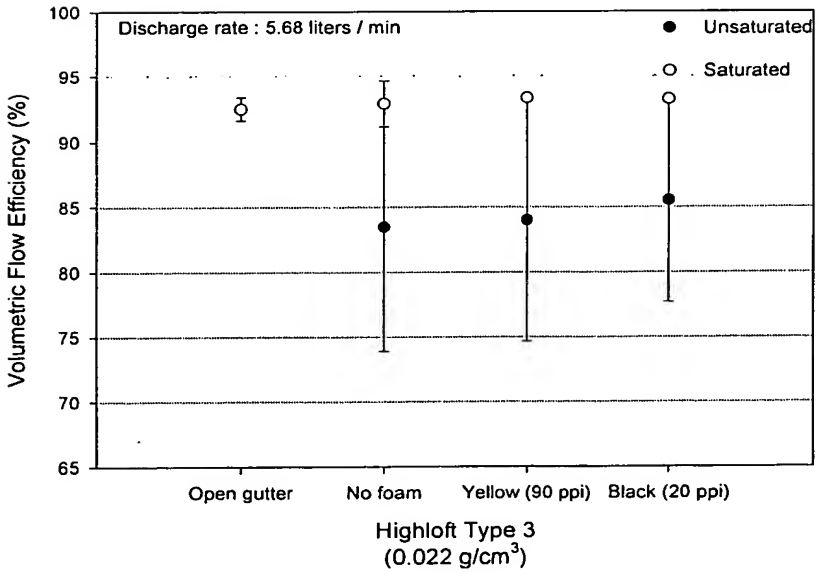
Highloft Type 2 (under the presence of different foams) vs. Vol. Flow Efficiency at 6.63 liters/min

FIG. 20



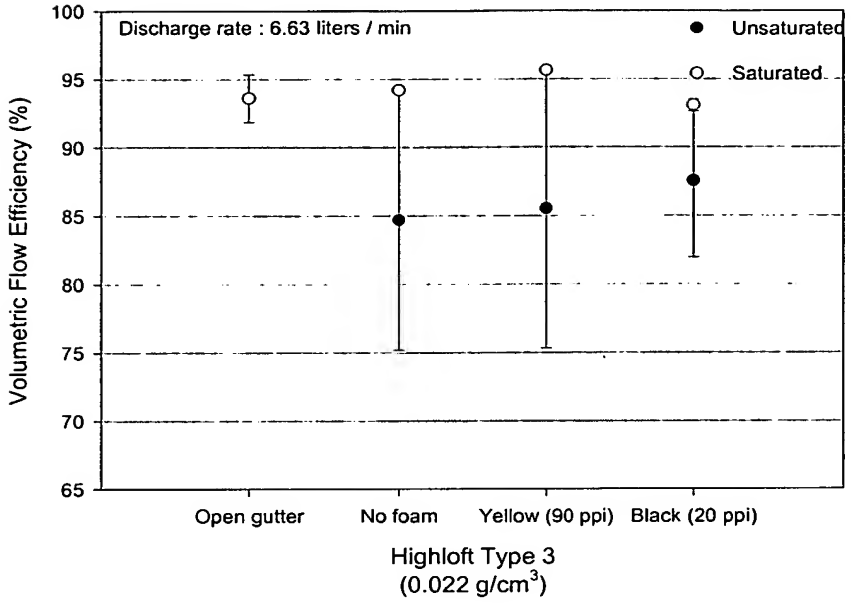
Highloft Type 3 (under the presence of different foams) vs. Vol. Flow Efficiency at 4.73 liters/min

FIG. 21



Highloft Type 3 (under the presence of different foams) vs. Vol. Flow Efficiency at 5.68 liters/min

FIG. 22



Highloft Type 3 (under the presence of different foams) vs. Vol. Flow Efficiency at 6.63 liters/min

FIG. 23A

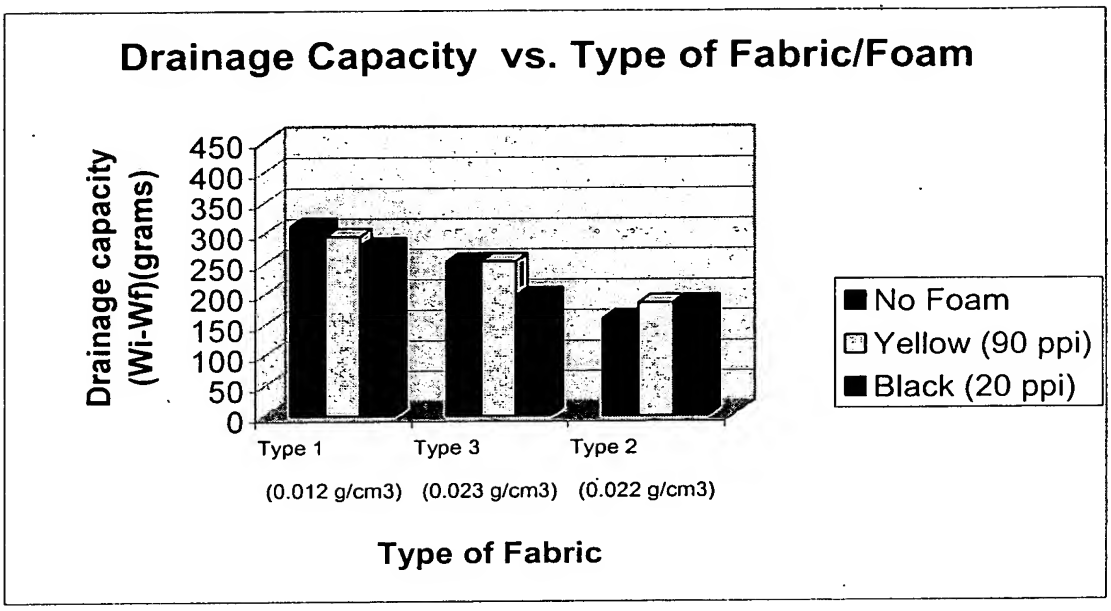
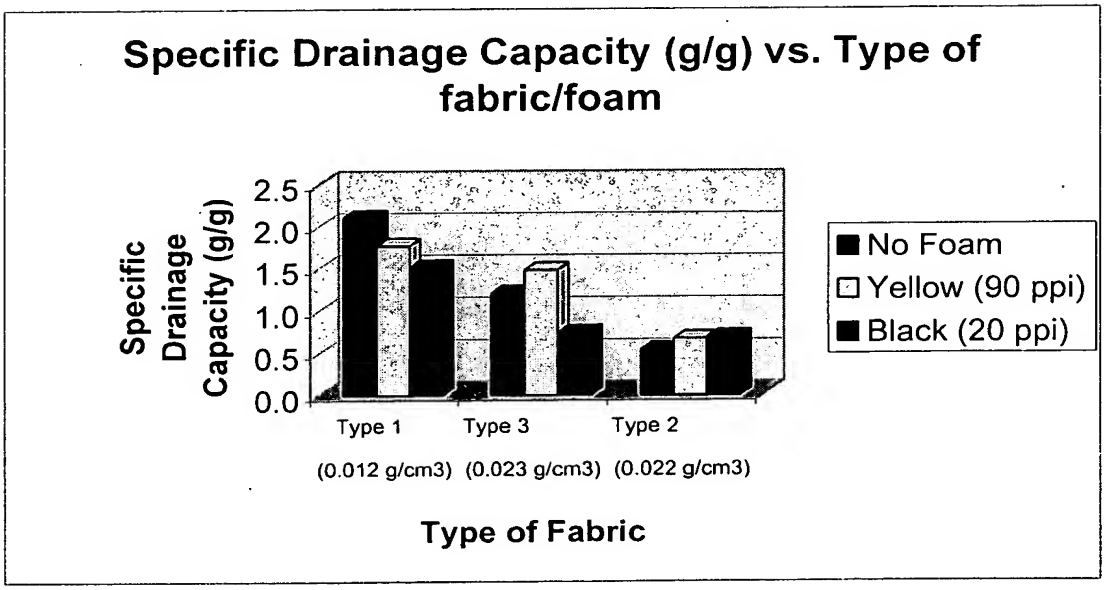


FIG. 23B



Drainage time for type 1 sample with/without foam materials

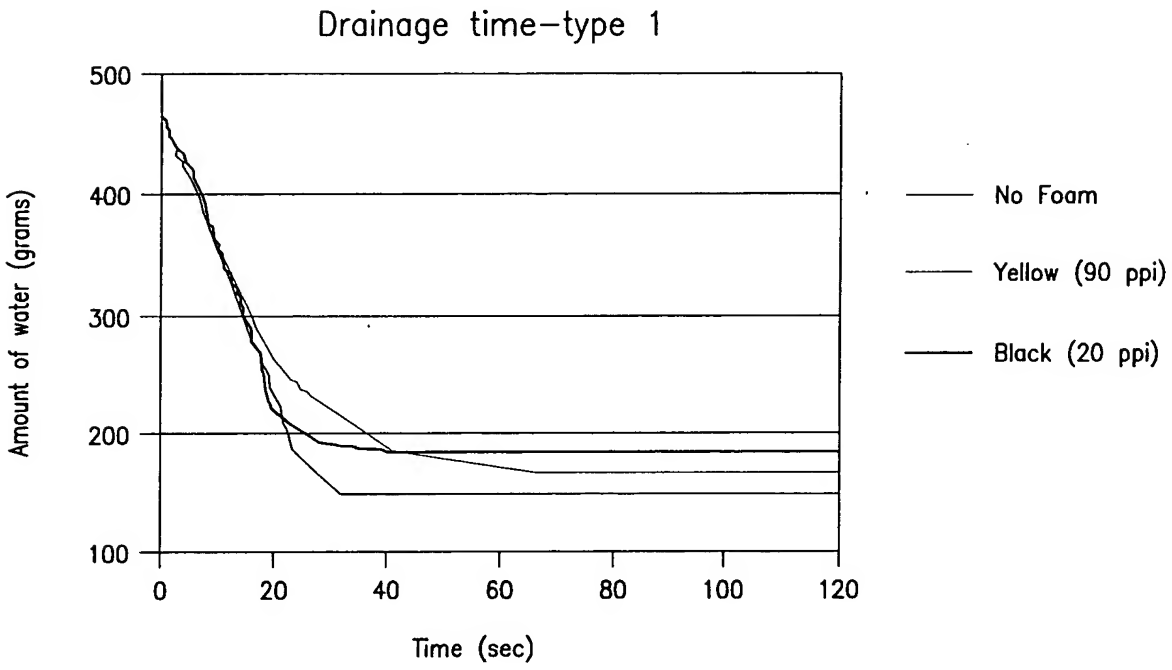


FIG. 24

Drainage time for type 2 sample with/without foam materials

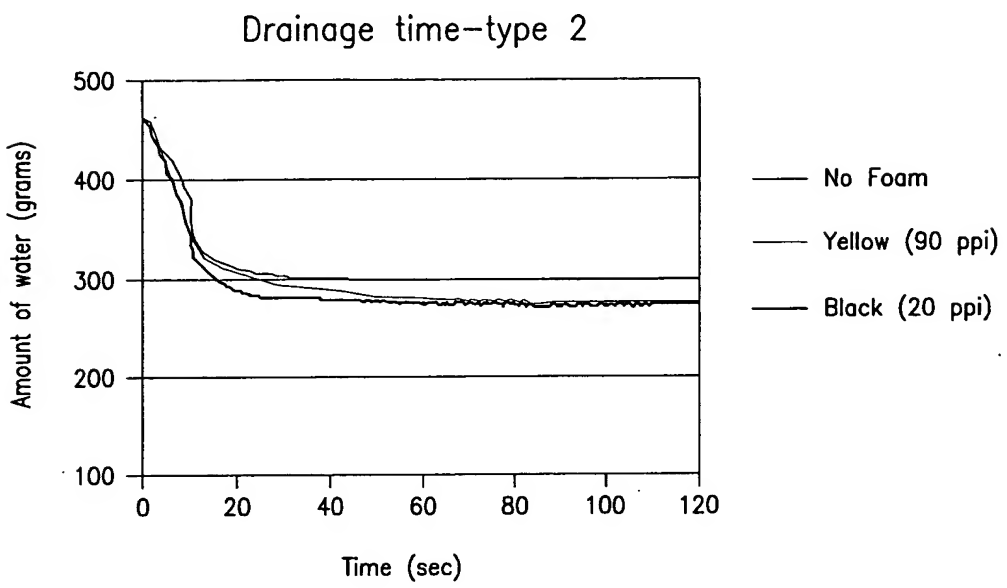


FIG. 25

Drainage time for type 3 sample with/without foam materials

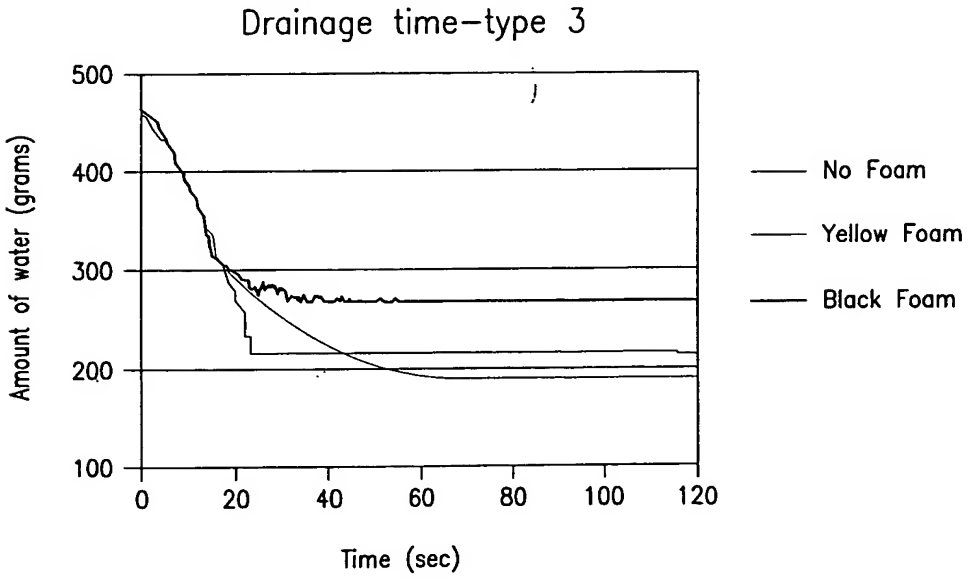


FIG. 26